Abstract

Background: No specific cause has been reported for Polycystic Ovary Syndrome (PCOS) yet, but many studies have examined the association between genetic markers and the incidence of this syndrome. It seems that, TNF-α has effect on fertility physiology such as regulation of steroids production from ovary, folliculogenesis, ovulation, and implantation. These parameters are affected in PCOS patients. This study has been conducted to investigate the relation of -1031(T/C) polymorphism of TNF-α promotor in PCOS patients.

Methods: This descriptive-analytic study contained 152 PCOS patients and 164 healthy women which are divided into 2 groups. 5 cc blood sample has collected from each patient for biochemical characterization such as fasting blood glucose, triglyceride, HDL, LDL, LH, FSH, testosterone, estradiol, and 2 hours' glucose. These blood samples are also used for genotypic evaluation and allele determination. The frequency of -1031(T/C) single-nucleotide polymorphism (SNP) of TNF-α gene promoter was investigated by PCR-RFLP technique. SPSS ver. 24 was used for data analysis.

Results: The results of this study showed that BMI, total cholesterol, triglyceride, testosterone, and 2 hours' glucose in PCOS patients were significantly higher than control group. On the other hand, estradiol level in control group is significantly higher than PCOS patients. the cholesterol level in CC genotype of healthy persons is significantly higher than TT and TC genotypes. Meanwhile, the level of triglyceride and HDL in the PCOS patients with TC genotype are significantly higher than other genotypes.

Conclusion: It can be concluded that -1031(T/C) polymorphism of TNF-α promoter has protective effect on PCOS

Keywords: Polycystic ovarian syndrome (PCOS), Single nucleotide polymorphism (SNP), Gene, TNF-α